21

ing member 3220 may compress as necessary to conform to the user's face using uniform compressibility or varying compressibility about the perimeter (discrete points or portions may be more or less compressible than other points or portions). Face contacting member 3220 may be affixed or mounted to face frame 3218, for example in a manner similar to how face frame 3218 is attached to the outer shield 3212. In some embodiments, face frame 3218 and face contacting member 3220 may be coupled together as an integrated unit. Various materials may be used for the face contacting mem- 10 ber 3220, including for example foam-like materials (e.g., as a single piece of foam or a combination of several pieces of foam) or other compressible materials. By changing the material or materials used for different portions of face contacting member 3220, the compressive forces at discrete points about 15 the perimeter may vary thereby making head mounted display 3210 more comfortable to wear. In some embodiments, face contacting member 3220 may include an outer layer selected for its aesthetic appearance. For example, one or more sides of face contacting member 3220 (e.g., the side surfaces and 20 face contacting surfaces) may be covered with a coating or flocking material such as fabric or rubber like materials.

It will be understood that this invention may be implemented in any suitable device for supporting the display generation components. For example, the principles of this invention may also be applied to glasses (e.g., sunglasses), a helmet, a hat, or any other suitable device for supporting the display generation components on a user.

The above described embodiments of the present invention are presented for purposes of illustration and not of limitation, 30 and the present invention is limited only by the claims which follow.

What is claimed is:

- 1. A head-mounted display, comprising:
- a spacer operative to receive at least one component of the 35 head-mounted display;

22

- an outer cover coupled to the spacer, the outer cover forming at least a portion of an outer surface of the headmounted display;
- at least one optical module movably coupled to the spacer, substantially enclosed by the outer cover, and operative to be displaced along at least two axes and in rotation around at least one axis with respect to the spacer without moving the outer cover with respect to the spacer.
- 2. The head-mounted display of claim 1, wherein the spacer comprises a plurality of flexible fins extending away from the outer cover towards a user's head.
- 3. The head-mounted display of claim 2, wherein the flexible fins are operative to bend to allow the spacer to conform to the shape of the user's head.
- **4**. The head-mounted display of claim **1**, further comprising:
  - a frame coupled to the spacer, wherein the at least one optical module is enclosed within the frame.
- 5. The head-mounted display of claim 4, further comprising a stabilization system for coupling the frame to the spacer.
- 6. The head-mounted display of claim 1, wherein the outer cover comprises at least one of glass, plastic, ceramic, and metal
- 7. The head-mounted display of claim 1, wherein the spacer comprises at least one groove for receiving the outer cover.
- 8. The head-mounted display of claim 1, wherein the spacer comprises at least perforation for at least one of allowing humidity to escape from within the head-mounted display and maintaining a constant temperature inside and outside the head-mounted display.
- **9**. The head-mounted display of claim **1**, wherein the at least one component comprises at least one of at least one strap, an inner cover, and an attachment feature.

\* \* \* \* \*